OWNER'S MANUAL

MOSFET AMPLIFIER

MODEL CA–70/CA–100/CA–150/CA–200/CA–300/CA–450

CALIBER

INTRODUCTION

Congratulations on selecting a **CALIBER** state-of-the-art component Power Amplifier. Your choice of a **CALIBER** Power Amplifier indicates a true appreciation of fine musical reproduction. To insure maximum performance and safety, please follow the instructions of this manual.

STANDARD FEATURES

- Regulated MOSFET Power Supply.
- Bridging Capability.
- Soft Start.
- Double Sided Epoxy Board.
- Protection Circuitry for Thermal, Overload, Short−Circuit.
- 2 Ohm Stability.
- Installer Friendly Chassis Design.
- Crossover Built-in: Low Pass Filter-80Hz
  High Pass Filter-120Hz
  Off-Full Range
- Tri-mode speaker operation.

INSTALLATION

The quality of the installation will affect the system performance and reliability. If you realize the complexity of the installation, you may wish to contact your local **CALIBER** authorized dealer.

The amplifier is generally mounted in the rear trunk area, but they can be mounted other convenient areas such as beneath a seat.

Please be sure to locate this unit in areas with reasonable air circulation and protection from unusual hazards. When deciding the mounting location, it should be considered to minimize the power supply wires and speaker wires. Minimizing the wires will provide higher audio output from the system.

It is important to ensure that the cooling fins of the heat sink are not against a panel or a surtace preventing air circulation. Mark the locations for the mounting screw holes by using the amplifier as a template and marking the location of the four mount ing holes.

Drill 2.5MM diameter holes at the marked locations and install the unit on the floor or the chassis using the supplied tapping screws. (Refer to Fig. 1)

CAUTION

Before drilling or cutting any holes, investigate the layout of your automobile thoroughly.
Use caution when working near the gas lines or hydraulic lines and electrical wiring.
Do not use the power amplifier unmounted, attach the amplifier securely to the vehicle.

POWER SUPPLY CONNECTIONS

The +12VDC and ground wires should be heavy gauge stranded copper wire with heavy insulation, the wire gauge should be 4MM² or larger. In addition, it has a 12V turn on wire and it should be 1.0MM²

+12V POWER

This terminal is connected directly to the battery terminal with a 4MM² wire or larger and do not connect to CAR fuse block.

GROUND

This terminal is the electrical ground and must be fastened securely to the vehicle chassis. A 4MM² wire is recommended for this connection.
Ensure that all paint, coating or other insulations are removed from around the hole area.

REMOTE TURN ON

Many radio's and other music sources have an output terminal for connection of the remote turn-on of the power amplifier. If a radio doesn't have a remote turn-on feature, then you can use the antenna relay wire which activates the antenna motor. But you must take notice if the antenna is lowered when the tape player is operating. In this case, separate switch must be used to control the amplifier.

CAUTION

To begin, make +12V wire connection, secondly the ground connection and finally the remote connection.
Furthermore, the +12V wire must always be fused at the battery end for protection against possible damage.
lf you need to replace the power fuse, replace it with a same value shown on the surface of the fuse.
Using a fuse of a different type or rating may result a serious hazard.

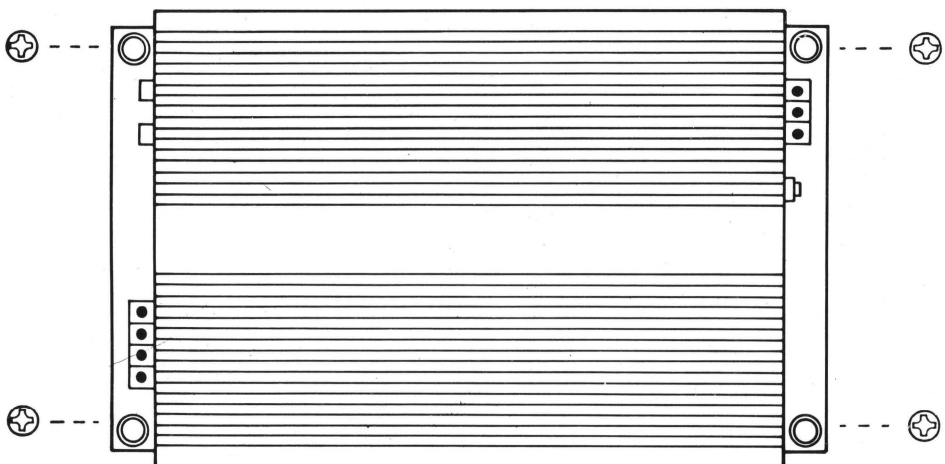


Fig. 1. INSTALLATION OF AMPLIFIER

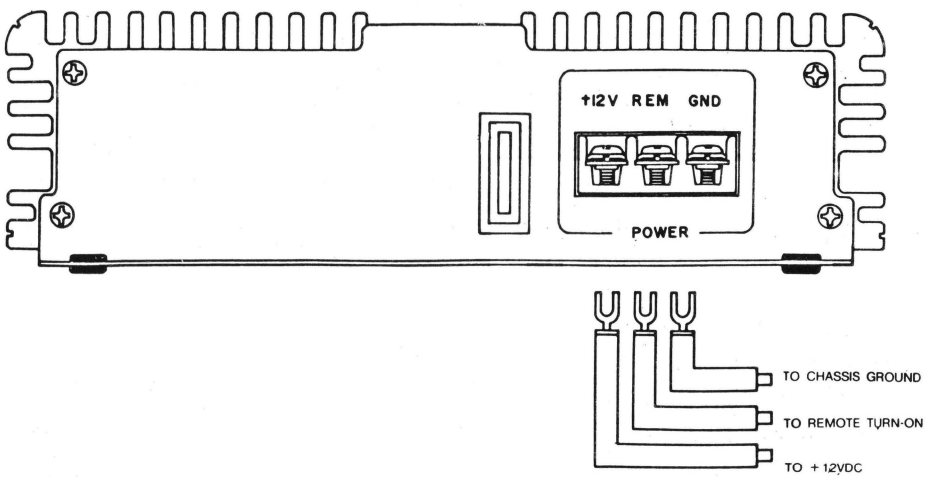


Fig. 2. POWER CONNECTIONS

SIGNAL INPUT CONNECTIONS

This amplifier has RCA connector for low level input. Adjustment of input level is accomplished by the gain control. Adjusting this control allows the amplifier gain to be controlled.

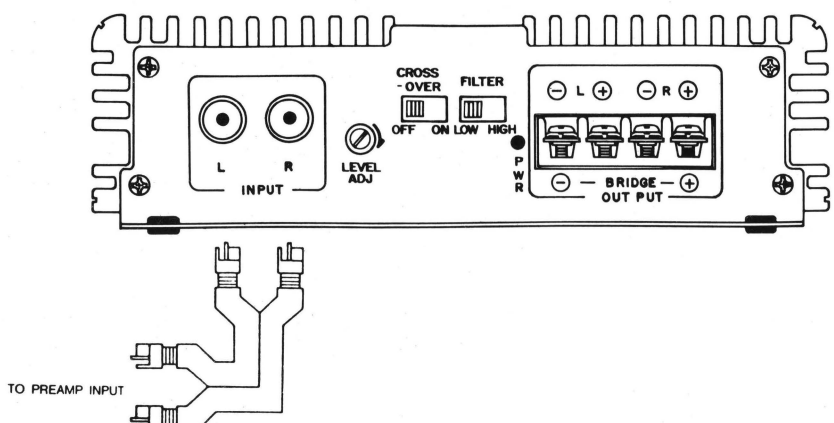


Fig. 3. SIGNAL INPUT CONNECTIONS

SPEAKER OUTPUT CONNECTIONS

The speaker wires should be connected to the speaker terminals on the amplifier.
Notice that most speakers have a polarity marking such as a "+" or a dot on the speaker terminals and these markings denote the positive terminals of the speaker and are used as a guide to phase the speakers.
Improper phasing causes a loss of bass response. For optimum performance, speaker impedances should be 4 ohms or greater, either bridging or mixed mono mode.

CAUTION

Never connect any speaker lead to the car chassis or any other lead. This can cause severe damage to your stereo system. If you have an OHMMETER, please use it to check for short circuitry and speaker resistance.

This amplifier has the STEREO/BRIDGE Switch in itself there is no need to select the STEREO or BRIDGE. You can connect the speakers to each channel in STEREO MODE and simultaneously you can connect one SUBWOOFER to the speaker terminal same as the BRIDGE mode. That is model can be operated in 3-way speaker systems.
This 3-way Speaker Mode is achieved from the following procedure.
(1) Set the Crossover Switch in OFF position.
(2) Connect the 2 Speakers in Stereo Mode.
(3) Connect one Subwoofer in Bridge Mode.

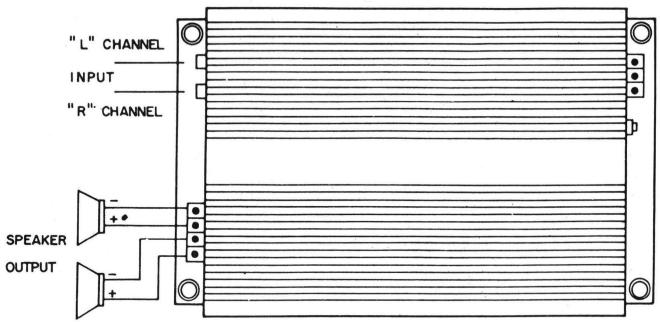


Fig. 4. SPEAKER OUTPUT CONNECTION-STEREO MODE

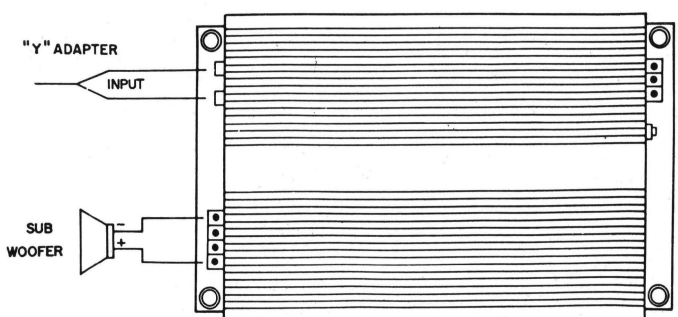


Fig. 5. SPEAKER OUTPUT CONNECTION-BRIDGE MODE

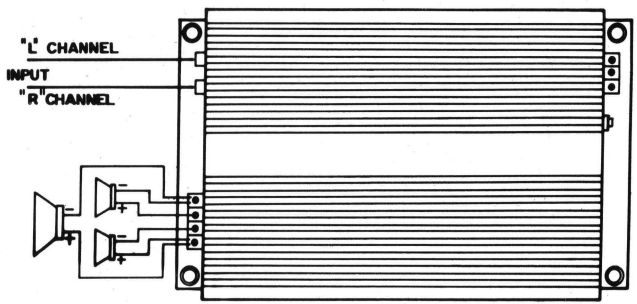


Fig. 6. SPEAKER OUTPUT CONNECTION- Tri-mode speaker operation.

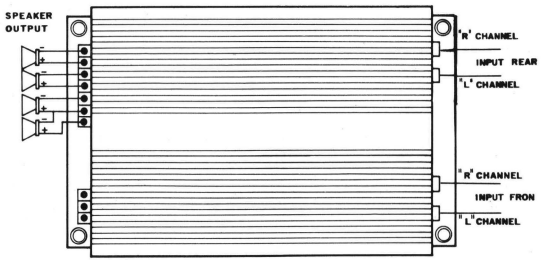


Fig. 7. SPEAKER OUTPUT CONNECTION-4 MODE OPERATION (CA-450 only)

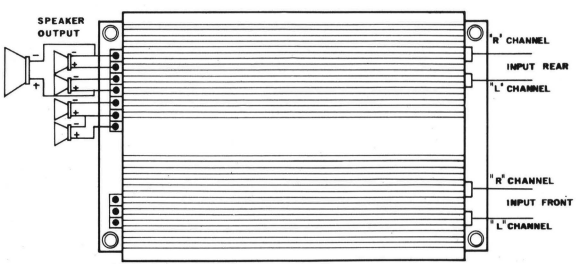


Fig. 8. SPEAKER OUTPUT CONNECTION-5 MODE OPERATION (CA-450 only)

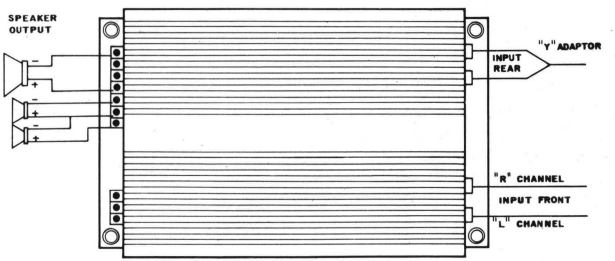


Fig. 9. SPEAKER OUTPUT CONNECTION-3 MODE OPERATION (CA-450 only)

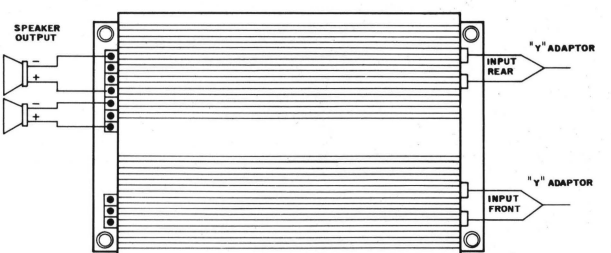


Fig. 10. SPEAKER OUTPUT CONNECTION-2 MODE OPERATION (CA-450 only)

FEATURES AND CONTROLS

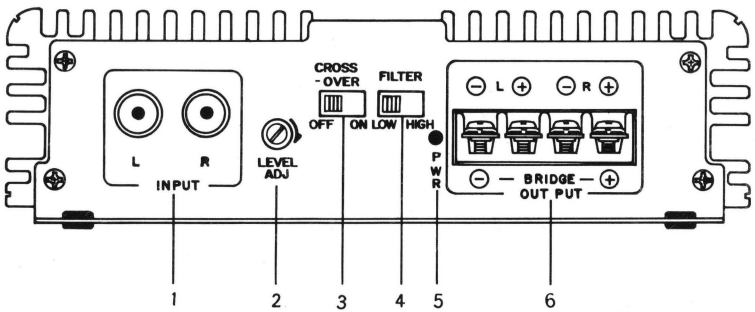


Fig. 11. FEATURES AND CONTROLS-FRONT PANEL,

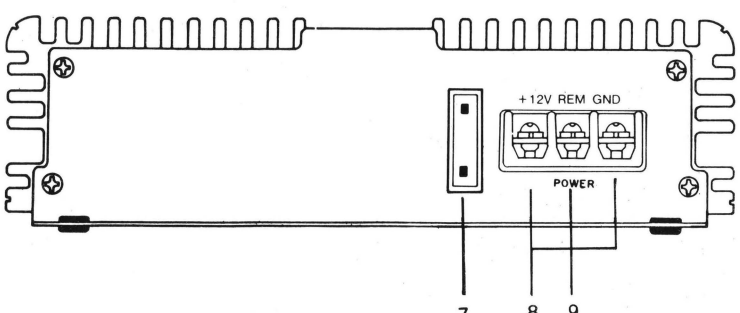


Fig. 12. FEATURES AND CONTROLS-REAR PANEL

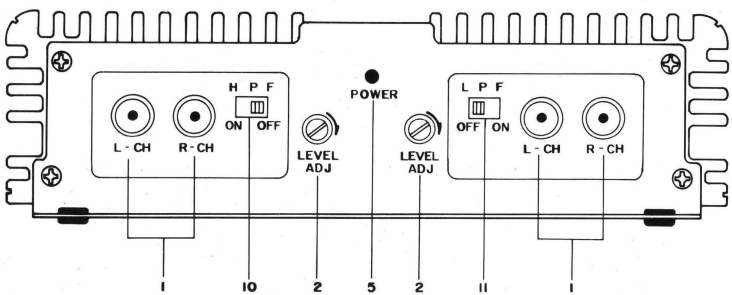


Fig. 13. FEATURES AND CONTROLS-FRONT PANEL (CA-450 only)

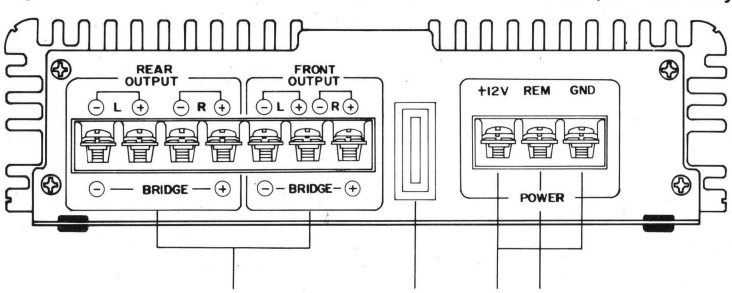
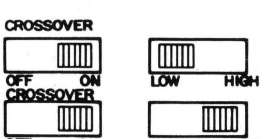


Fig. 14. FEATURES AND CONTROLS-REAR PANEL (CA-450 only)

1. RCA Low Level Input
   It allows left and right input channels to be connected to the amplifier using RCA jacks.
2. Input Level Control
   This is for adjusting input sensitivities. To adjust the input sensitivity, turn the controls fully counter-clockwise to minimum. Adjust the radio/head unit volume knob to maximum volume, then turn the level controls on the amplifier clockwise until audible distortion occurs.
3. Crossover ON/OFF Switch
   When this switch is at the OFF position, the amplifier outputs full range frequency. When this switch is at the ON position, the amplifier outputs Low Pass or High Pass frequency according to selection of Low or High Pass Switch.
4. Low/High Pass Switch



: 80Hz Low Pass Filter

: 120Hz High Pass Filter

5. Power Indicator
   It idicates that the amplifier has been switched on.
6. Speaker Terminals
   It allows the connection of speakers to the amplifier.

7. Fuse

It protects both the amplifier and automobile electrical system from **FAULT** conditions. It is a standard automotive fuse.

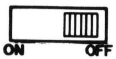
8. Power Connection

+12V connect to the battery directly using a $4MM^2$ wire or larger. GND connect to the vehicle chassis using a $4MM^2$ wire or larger and a $4MM^2$ wire is recommended for GND connection.

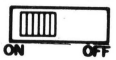
9. Turn On Connection

This connects the control wire which allows the amplifier to be turned on and off by the head unit.

10. High pass Filter Switch (Front output)

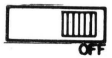


: Full Range Frequency

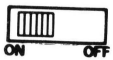


: 120Hz High Pass Filter

11. Low pass Filter Switch (Rear output)



: Full Range Frequency



: 80Hz Low Pass Filter

SPECIFICATIONS

	CA-70	CA-100	CA-150	CA-200	CA-300	CA-450
* Max Power Output						
· 4ohm, 20Hz−20KHz, THD 0.05%, Stereo	70W×2	100W×2	150W×2	200W×2	300W×2	100W×4
· 4ohm, 1KHz, Mono	100W	200W	300W	400W	600W	200W×2
* Continuous Power Output						
· 4ohm, 20Hz−20KHz, THD 0.02%, Stereo	35W×2	50W×2	75W×2	100W×2	150W×2	50W×4
· 4ohm, 1KHz, Mono	70W	100W	150W	200W	300W	100W×2
* Frequency Response, +0, −1dB	20Hz — 30KHz					
* Total Harmonic Distortion	〈 0.05% with 80KHz BPF					
* Signal to Noise Ratio(A−Weighted)	〉95dB					
* Input Sensitivity	150mV-3V					
* Input Impedance	20K Ohms					
* Damping Factor	〉180					
* Fuse Rating	15A	20A	25A	30A	25A×2	30A
* Output Impedance	2~8Ohms					
* Dimensions : W×H×D (Inches)	7½ × 2 × 6	7½ × 2 × 7⅛	7½ × 2 × 10	7½ × 2 × 11¾	7½ × 2 × 13¾	71/2 × 2 × 15

* Due to continuing improvements, specifications are subject to change without notice.